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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/960,575 | 09/24/2001 | Shinichi Imai | 0819-0651 | 7295 |

22204 7590 10/31/2002

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EXAMINER

MAGEE, THOMAS J

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2811

DATE MAILED: 10/31/2002 //

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 09/960,575 | Applicant(s) IMAI, SHINICHI | |
| | Examiner Thomas J. Magee | Art Unit 2811 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Restriction/Elections

1. Applicant's election without traverse of Claims 1 – 6 in Letter No. 10 of August 1, 2002 is acknowledged.

Claim Rejections – 35 U.S.C. 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1 and 2 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. On page 20 of the instant application Applicant defines the quantity "L" in the ratio, S/L , as the sum of the widths, w , "of the lead conductive films in the boundary region, R_{cr} , of the capacitance insulating film that is in contact with the isolating region." In Claim 1, Applicant recites "a total sum of widths of the lead conductive films in the boundary portion." In both cases there is no recitation of how to determine " w " within a distance, R_{cr} , at the boundary. Further, in Claim 2, Applicant is reciting a value for, S/L , based upon the definition of L in the specification as the sum of widths determined in the boundary region. The lack of clarity would make it extremely difficult for one skilled in the art to practice and use the invention, since the ambiguity in

Art Unit: 2811

determining, S/L, would not be consistent with a determination of a prescribed value recited in the instant application.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase, "certain value or less" is not definitive.

Claim Rejections – 35 U.S.C. 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1, in so far as being in compliance with 35 U.S.C. 112 is rejected under 35 U.S.C. 102(b) as being anticipated by Saito et al. (US 5,691,556).

Saito et al. disclose (Col. 21, lines 26 – 42) an integrated circuit containing capacitors, where an active region and an isolating region (17) (See Figure 1) enclosing the active region are provided on a silicon layer (24) with an insulating film (22) on the active region with a boundary in contact with the isolating region (17). An upper conducting plate (21) atop the insulating film with a portion over the isolating region is electrically

Art Unit: 2811

continuous and corresponds exactly with the electrically continuous pad, lead conductive film and upper electrode recited in the instant application. An interlayer insulating film is formed over the substrate.

8. Claims 3 – 6 are rejected under 35 U.S. C. 103(a) as being anticipated by Saito et al.

Regarding Claim 3, as mentioned previously, Saito et al. disclose an integrated circuit containing capacitors with an active region, isolating region enclosing active region on a silicon layer with an insulating film on the active region and a boundary in contact with the isolating region. An upper conducting layer atop the insulating film, with a portion over the isolating region is electrically continuous and corresponds exactly with the electrically continuous pad, lead conductive film and upper electrode recited in the instant application. An interlayer insulating film is formed over the substrate and contact holes penetrate the layer to reach the conducting layer. The capacitance insulating film is thicker within the boundary portion than at other points.

9. Claims 4 – 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito et al.

Saito et al. disclose a second and a first active region, such that the first and second active regions are sandwiched by the isolating region (See Figure 1). A first capacitance insulating film (22) is formed on the first active region with a boundary in contact with the isolating region. A second capacitance insulating film is formed on the second act-

Art Unit: 2811

Ive region. An upper conducting layer (21) is formed on the first capacitance insulating film extending over a part of the isolating region, corresponding exactly to the electrically continuous upper electrode, pad and lead conductive film. An interlayer insulating film is formed over the substrate and subsequently, contact holes cut, where the first contact holes penetrate the interlayer insulating film to reach the conducting (electrode pad) layer and second contact holes penetrating the interlayer insulating film and second capacitance insulating film to reach the second active region. The diameter of the second contact hole is larger than the first (See Figure 1 at contacts 14 and 13). The aspect ratios, defined as, d/h (d =diameter and h =height), are approximately equal, since from the figure, the heights and diameters for each hole individually, are equal. This is further seen in Figure 6, where the aspect ratios of the second hole (contact 66) and first hole (contact 68, middle) are both approximately equal to one.

Conclusions

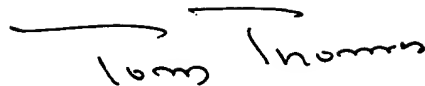
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to **Thomas Magee**, whose telephone number is **(703) 305 5396**. The Examiner can normally be reached on Monday through Friday from 8:30AM to 5:00PM (EST). If attempts to reach the Examiner by telephone are unsuccessful, the examiner's supervisor, **Tom Thomas**, can be reached on **(703) 308-2772**. The fax number for the organization where this application or proceeding is assigned is **(703) 308-7722**.

Application/Control Number: 09/960,575

Page 6

Art Unit: 2811

Thomas Magee
October 25, 2002

A handwritten signature in black ink that reads "Tom Thomas". The signature is written in a cursive style with a horizontal line above the first name.

TOM THOMAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800